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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Federal Communications Commission

FCC 98-208

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of

Revision of Part 15 of the Commission's
Rules regarding Ultra-Wideband
Transmission Systems

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ET Docket No. 98-153

NOTICE OF INQUIRY

COMMENTS OF PULSON MEDICAL, INC.

Pulson Medical, Inc. (PMI) by its president William S. Moorhead, hereby files its comments in the above-captioned proceeding (The NOI).

I am going to address these comments focusing on covert communications that overcome multipath. (NOI at 1.) While I am familiar with various radar applications of ultra-wideband radio (UWB) I have a greater experience and direct interest in low powered UWB communications that overcome multipath. I am further going to base my comments on the UWB technology of Time Domain Corporations (TM-UWB) because it is the system with which I am most familiar.

PMI is familiar with and supports the factual statements, arguments and conclusions in the comments of the Ultra Wideband Working Group (UWBWG) and Time Domain Corporation (TDC) in this proceeding.

BACKGROUND

PMI has been actively engaged in developing a market for ultra wideband technology products in the medical field for over four years. Before forming PMI, principals of PMI investigated numerous approaches to providing communications and tracking solutions for the medical marketplace. PMI has at times retained technical experts including experts at NASA's Jet Propulsion Laboratory, all of whom have concluded that UWB can uniquely address the critical and unusual need of the medical industry. PMI is an exclusive licensee of TDC for medical and related data.

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THE URGENT NEED FOR ULTRA WIDEBAND

A pressing need for UWB is medical communications - providing reliable medical information to the physician who needs to make rapid, informed decisions, to patients who need to be free to live normally but still provide important body function information to the physician and throughout healthcare facilities. There are numerous other medical instances where wireless capability could have enormous impact on performance and cost, for example, emergency services, tracking critical medical equipment and telemedicine.

TM-UWB is PMI's choice for medical applications because its capabilities uniquely solve the medical industry's serious communications problems which narrowband systems cannot address, such as:

Secrecy - The covert nature of UWB's signals makes this transmission method attractive to the medical records industry which is extremely sensitive to the privacy of patient records. In my experience there is no way to exaggerate how seriously the medical industry regards protection of patient information.

Multipath Immunity - Conventional radio functions inadequately in hospitals primarily due to multipath. This attribute alone (multipath immunity) is enough to recommend UWB for the high multipath environment of hospitals.

Safety for Sensitive Equipment - Conventional radios can disrupt sensitive medical equipment (e.g. pacemakers). Cellphones are banned from many hospitals for this very reason. TM-UWB radios emit significantly less radio energy.

Radio Hostile Environment - Multipath is not the only potentially interfering radio signal found in hospitals. Numerous digital devices, microprocessors and high voltage equipment cause interference to narrowband radios. TM-UWB rejects these interferors through its time position hopping and duty cycle and so out performs conventional radios.

High Power, Low Battery Life - TM-UWB devices are the opposite of conventional narrowband - low power, high battery life. This makes them all the more appropriate for this operating environment.

Finally, there is a growing perception among the scientific and medical community that prolonged exposure to RF might be unsafe*. Therefore, while the value of wireless telemetry is appreciated among the medical profession, lower powered radios will be favored, other things being equal.

* PMI recommends that the reader check TDC's website (www.time-domain.com) for a report by the Jet Propulsion Laboratory which is a survey of the current scientific literature on the issue of biomedical effects of radio transmissions.

TM-UWB is the radio technology which will allow healthcare facilities to make their operations efficient and cost effective as well as providing more reliable secure transmissions outside the care-giving facility.

TECHNICAL AND REGULATORY ISSUES DEFINING AND MEASURING UWB SIGNALS

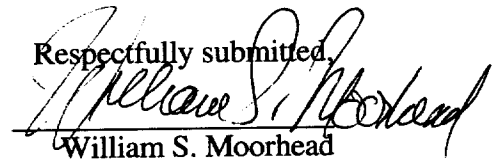
PMI strongly supports the definition and measurement procedures proposed by the UWBWG.

RESTRICTED BANDS AND EMISSION LIMITS

The distinction between an intentional and unintentional radiator seems not to address the issue which is more properly phrased in terms of acceptable emission limits and the resulting potential for interference. There are numerous emitters putting signals into the restricted bands. Consider the Los Angeles Airport bounded by several office complexes. There is no harmful interference to safety of life restricted bands from all the emitters in those office buildings. PMI supports the arguments and conclusions of the UWBWG.

Dated: December 7, 1998

Respectfully submitted,



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President

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